CLAIMS:

1.   A method comprising:

monitoring a plurality of physiological parameters of a patient; and

determining a value of a sleep metric that indicates a probability of the patient being asleep based on the physiological parameters.

2.   The method of claim 1, wherein the physiological parameters comprise at least one of activity level, posture, heart rate, respiration rate, respiratory volume, and core temperature.

3.   The method of claim 1, wherein the physiological parameters comprise at least one of blood pressure, blood oxygen saturation, partial pressure of oxygen within blood, partial pressure of oxygen within cerebrospinal fluid, muscular activity, core temperature, arterial blood flow, and galvanic skin response.

4.   The method of claim 1, further comprising determining a variability of at least one of the physiological parameters, wherein determining a value of the sleep metric comprises determining the value of the sleep metric based on the variability.

5.   The method of claim 1, further comprising determining at least one of a mean value and a median value for at least one of the physiological parameters, wherein determining a value of a sleep metric comprises determining the sleep metric based on the at least one of the mean value and the median value.

6.   The method of claim 1, wherein determining a value of a sleep metric comprises determining a value for each of a plurality of sleep metrics, each of the values determined based on a respective one of the physiological parameters.

7.   The method of claim 6, wherein determining a value of a sleep metric comprises determining a value of an overall sleep metric based on the plurality of sleep metric values.

8.   The method of claim 7, wherein determining a value of an overall sleep metric comprises averaging the values of the plurality of sleep metrics.

9.   The method of claim 7, wherein determining a value of an overall sleep metric comprises applying a weighting factor to a value of at least one of the plurality of sleep metrics.

10.   The method of claim 1, further comprising:
            comparing the value of the sleep metric to a threshold value; and
            determining whether the patient is asleep based on the comparison.

11.   The method of claim 10, further comprising:
            comparing the value of the sleep metric to a plurality of thresholds; and
            determining a sleep state of the patient based on the comparison.

12.   The method of claim 11, wherein determining a sleep state of the patient comprises determining whether the patient is in one of a rapid eye movement (REM) sleep state and a nonrapid eye movement (NREM) sleep state.

13.   The method of claim 10, wherein the threshold value is selected by a user.

14.   The method of claim 10, further comprising controlling delivery of a therapy to the patient based on the determination of whether the patient is asleep.

15.   The method of claim 10, further comprising storing information indicating when the patient is asleep for retrieval by a user.

16.   The method of claim 15, further comprising evaluating the effectiveness of a therapy delivered to the patient based on the information indicating whether the patient is asleep.

17.   The method of claim 16, wherein the therapy comprises at least one of a neurostimulation and a drug therapy.

18.   The method of claim 16, wherein the therapy is a pain therapy.

19.   A medical system comprising:

a plurality of sensors, each of the sensors generating a signal as a function of at least one physiological parameter of a patient; and

a processor that monitors a plurality of physiological parameters of the patient based on the signals output by the sensors, and determines a value of a sleep metric that indicates a probability of the patient being asleep based on the physiological parameters.

20.   The system of claim 19, wherein the physiological parameters comprise at least one of activity level, posture, heart rate, respiration rate, respiratory volume, and core temperature.

21.   The system of claim 19, wherein physiological parameters comprise at least one of blood pressure, blood oxygen saturation, partial pressure of oxygen within blood, partial pressure of oxygen within cerebrospinal fluid, muscular activity, arterial blood flow, and galvanic skin response.

22.   The system of claim 19, wherein the processor determines a variability of at least one of the physiological parameters, and determines the sleep metric based on the variability.

23.   The system of claim 19, wherein the processor determines at least one of a mean value and a median value of at least one of the physiological parameters, and determines the sleep metric based on the at least one of the mean value and the median value.

24.   The system of claim 19, wherein the processor determines a value of each of a plurality of sleep metrics, each of the plurality of values determined based on a respective one of the physiological parameters.

25.   The system of claim 24, wherein the processor determines a value of an overall sleep metric based the values of the plurality of sleep metrics.

26.   The system of claim 25, wherein the processor determines the value of the overall sleep metric by averaging the values of the plurality of sleep metrics.

27.   The system of claim 26, wherein the processor applies a weighting factor to at least one of values of the plurality of sleep metrics.

28.   The system of claim 19, further comprising a memory to store a threshold value, wherein the processor compares the value of the sleep metric to a threshold value and determines whether the patient is asleep based on the comparison.

29.   The system of claim 28, wherein the memory stores a plurality of threshold values, and the processor compares the value of the sleep metric to each of the threshold values and determines a sleep state of the patient based on the comparison.

30.   The system of claim 29, wherein the processor determines whether the patient is in one of a rapid eye movement (REM) sleep state and a nonrapid eye movement (NREM) sleep state.

31.   The system of claim 28, further comprising a user interface, wherein a user selects the threshold via the user interface.

32.   The system of claim 28, wherein the processor controls delivery of a therapy to the patient based on the determination of whether the patient is asleep.

33.   The system of claim 28, wherein the processor stores information indicating when the patient is asleep within the memory for retrieval by a user.

34. The system of claim 19, further comprising an implantable medical device that includes the processor.

35. The system of claim 34, wherein the implantable medical device includes the sensor.

36. The system of claim 34, wherein the implantable medical device is coupled to the sensor via a lead.

37. The system of claim 34, wherein the implantable medical device is wirelessly coupled to the sensor.

38. The system of claim 34, wherein the implantable medical device comprises at least one of an implantable neurostimulator and an implantable pump.

39. A system comprising:

 means for monitoring a plurality of physiological parameters of a patient; and

 means for determining a value of a sleep metric that indicates a probability of the patient being asleep based on the physiological parameters.

40. The system of claim 39, further comprising means for generating at least one signal as a function of the physiological parameters, wherein the means for monitoring comprises means for monitoring the physiological parameters based on the signal.

41. The system of claim 39, wherein the means for determining a sleep metric comprises means for determining a value for each of a plurality of sleep metrics, each of the plurality of values determined based on a respective one of the physiological parameters.

42. The system of claim 41, wherein the means for determining a value of a sleep metric comprises means for determining a value of an overall sleep metric based the values of the plurality of sleep metrics.

43.   The system of claim 41, further comprising means for comparing the value of the sleep metric to a threshold value and determining whether the patient is asleep based on the comparison.

44.   The system of claim 43, further comprising:

    means for delivering a therapy to the patient; and

    means for controlling delivery of a therapy to the patient by the therapy delivery means based on the determination of whether the patient is asleep.

45.   The system of claim 43, further comprising means for storing information indicating when the patient is asleep for retrieval by a user.

46.   A method comprising:

    monitoring a physiological parameter of a patient via an implantable medical device, wherein the physiological parameter comprises one of blood pressure, blood oxygen saturation, muscular activity, core temperature, arterial blood flow, and galvanic skin response; and

    determining whether a patient is asleep based on the physiological parameter.

47.   The method of claim 46, wherein monitoring a physiological parameter comprises monitoring a plurality of physiological parameters, and wherein determining whether a patient is asleep comprises determining whether the patient is asleep based on the plurality of physiological parameters.

48.   The method of claim 47, wherein determining whether a patient is asleep comprises:

    determining a value of a sleep metric that indicates a probability of the patient being asleep based on the plurality of physiological parameters;

    comparing the value of the sleep metric to a threshold value; and

    determining whether the patient is asleep based on the comparison.

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49.   The method of claim 48, wherein determining a sleep metric comprises:

determining a value of a sleep metric for each of the plurality of monitored physiological parameters; and

determining a value of an overall sleep metric based on the values of the plurality of sleep metrics, and

wherein determining whether the patient is asleep comprises determining whether the patient is asleep based on comparison of the value of the overall sleep metric to the threshold.

50.   The method of claim 46, further comprising controlling delivery of a therapy to the patient based on the determination of whether the patient is asleep.

51.   The method of claim 46, further comprising storing information indicating when the patient is asleep for retrieval by a user.

52.   The method of claim 51, further comprising evaluating the effectiveness of a therapy delivered to the patient based on the information indicating whether the patient is asleep.

53.   A medical system comprising:

a sensor to generate a signal as a function of a physiological parameter of a patient, wherein the physiological parameter comprises one of blood pressure, blood oxygen saturation, muscular activity, core temperature, arterial blood flow, and galvanic skin response; and

an implantable medical device that includes a processor to monitor the physiological parameter based on the signal and determine whether a patient is asleep based on the physiological parameter.

54.   The system of claim 53,

further comprising a plurality of sensors that generate a signal as a function of a physiological parameter of a patient,

wherein the processor monitors a plurality of physiological parameters based on the signals and determines whether the patient is asleep based on the plurality of physiological parameters.

55.   The system of claim 54,

wherein the implantable medical device further comprises a memory to store a threshold value, and

wherein the processor determines a value of a sleep metric that indicates a sleep state of the patient based on the plurality of physiological parameters, compares the value of the sleep metric to a threshold value, and determines whether the patient is asleep based on the comparison.

56.   The system of claim 55, wherein the processor determines a value of a sleep metric for each of the plurality of monitored physiological parameters, determines a value of an overall sleep metric based on the values of the plurality of sleep metrics, and determines whether the patient is asleep based on comparison of the value of the overall sleep metric to the threshold.

57.   The system of claim 53, wherein the processor controls delivery of a therapy to the patient based on the determination of whether the patient is asleep.

58.   The system of claim 53,

wherein the implantable medical device further comprises a memory, and

wherein the processor stores information indicating when the patient is asleep within the memory for retrieval by a user.

59.   The system of claim 53, wherein the implantable medical device includes the sensor.

60.   The system of claim 53, wherein the implantable medical device is coupled to the sensor via a lead

61.   The system of claim 53, wherein the implantable medical device is wirelessly coupled to the sensor.

62.   The system of claim 53, wherein the implantable medical device comprises at least one of an implantable neurostimulator and an implantable pump.

63.   A computer-readable medium comprising instructions that cause a programmable processor to:

monitor a plurality of physiological parameters of a patient; and

determine a value of a sleep metric that indicates a probability of the patient being asleep based on the physiological parameters.

64.   The medium of claim 63, further comprising instructions that cause the processor to determine a variability of at least one of the physiological parameters, wherein the instructions that cause the processor to determine a value of the sleep metric comprise instructions that cause the processor to determine the value of the sleep metric based on the variability.

65.   The medium of claim 63, further comprising instructions that cause the processor to:

determine a value for each of a plurality of sleep metrics, each of the values determined based on a respective one of the physiological parameters; and

determine a value of an overall sleep metric based on the plurality of sleep metric values.

66.   The medium of claim 63, further comprising instructions that cause the processor to:

compare the value of the sleep metric to a threshold value; and

determine whether the patient is asleep based on the comparison.

67.   The method of claim 66, further comprising instructions that cause the processor to:

compare the value of the sleep metric to a plurality of thresholds; and

determine a sleep state of the patient based on the comparison.

68.   The medium of claim 67, wherein the instructions that cause the processor to determine a sleep state of the patient comprise instructions that cause the processor to determine whether the patient is in one of a rapid eye movement (REM) sleep state and a nonrapid eye movement (NREM) sleep state.